Comments on JR Whiting Report

EPA:

Page 3 – On the company's response to EPA's CERCLA 104 survey, the company claims that the hazard rating for Pond 6, which is listed in the NID, is "low". However, this isn't mentioned on Page 3 or on Page 4, when Pond 6 is given a "significant" hazard rating. Please elaborate/clarify.

State:

From:	"Bean, Lawrence (DNRE)" <BEANL@michigan.gov>
To:	James Kohler/DC/USEPA/US@EPA, Jose Cisneros/R5/USEPA/US@EPA, Nate Nemani/R5/USEPA/US@EPA
Cc:	"Lee, Lonnie (DNRE)" <LEEL@michigan.gov>, "Blayer, Steve (DNRE)" <BLAYERS@michigan.gov>, "Ring, Margie (DNRE)" <RINGM@michigan.gov>
Date:	02/04/2011 03:48 PM
Subject:	RE: Comment Request on Consumers Energy DE Karn, Weadock, and JR Whiting Draft Reports

Dear Mr. Kohler
I reviewed the report titled Draft Dam Safety Assessment of CCW Impoundments at J.R. Whiting Plant dated November 30, 2010. The report contained a good summary of historical information about each impoundment. I agree with the conclusions and recommendations in the report. I agree with the repairs and long term improvements identified for ponds 1, 2, and 6. If you have any questions please contact me.

Lawrence Bean
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Company: See attached letter dated March 23, 2011

Consumers Energy

A CMS Energy Company

Environmental Services

March 23, 2011

Mr. Steve Hoffman
U.S. Environmental Protection Agency
Two Potomac Yard
2733 South Crystal Drive
5th Floor, N-5237
Arlington, VA 22202-2733

DRAFT REPORT, DAM SAFETY ASSESSMENT OF CCW IMPOUNDMENTS, J.R. WHITING PLANT, ERIE, MICHIGAN

Dear Mr. Hoffman,

Thank you for the opportunity to allow Consumers Energy to comment on the Draft Dam Safety Assessment of CCW Impoundments prepared by O'Brien & Gere Engineers. We have appreciated the opportunity to work closely with staff and your contractor, O'Brien & Gere Engineers to produce the most accurate document based on the reports provided as part of this assessment.

Please find the detailed review comments provided as an attachment.

Consumers Energy is concerned about the hazard potential classification for Ponds 1 & 2 and Pond 6. As discussed during the site visit interview process and noted within this assessment, Consumers Energy contracted with AECOM to perform a dam safety inspection and Potential Failure Modes Analysis (PFMA) for each of the on-site structures serving as coal combustion residual storage or disposal. The result of this evaluation, informed by the Potential Failure Modes Analysis evaluation, was that Ponds 1 &2 and Pond 6 were assessed as having a **low** hazard potential.

Based on review of the criteria for low, significant, and high hazard potential from the dam safety checklist provided during the assessment and experience with other EPA dam safety contractors at our DE Karn and JC Weadock facilities, Consumers believes that the O'Brien & Gere assessment that downgrades the hazard potential classification from a previous independent, third-party assessment, and in the case of Pond 6 a state assessment is not justified by the information provided within this draft report. The discussion provided in Section 2.2 of this report seems to be largely qualitative and does not add any further information or analysis on the part of O'Brien & Gere.

In a very brief comparison with dam safety assessments conducted at our DE Karn and JC Weadock facilities, both consultants used the surface impoundment size classification developed by the Army Corps of Engineers (USACE ER 1110-2-106, Table 2.2a) as an initial quantitative basis for determining severity of hazard based on the size of the facility. In the case of Ponds 1 & 2, the impoundment height (19-ft) is less than the listed height range for the lowest category (e.g. 25 and <40) and the storage area is on the low end of that category indicating that the impoundment is small. Based on the construction for Pond 6, it is also classifies as a small impoundment relative to both the height of impoundment and available storage area.

Consumers Energy believes that a baseline quantitative measure balanced against each of the qualitative measures from the Coal Combustion Waste (CCW) checklist justifies an agreement that the low hazard

rating that has been determined for Ponds 1 & 2 by AECOM and Ponds 1 & 2, and Pond 6 by AECOM and by staff of the Michigan Dam Safety agency. In order to address the issue of hazard rating with EPA staff and/or your contractor, O'Brien & Gere, Consumers Energy would like an opportunity to further discuss the best manner to reflect the current condition of the facilities at the J.R. Whiting facility with you. Please feel free to contact me to arrange a meeting.

Thank you again for allowing Consumers Energy to comment on this draft report. We look forward to working with you and your contractors to finalize this work product.

Sincerely,

Harold D. Register, Jr., P.E.
Sr. Engineer
Land and Water Management
Phone: (517)788-2982
Email: hdregister@cmsenergy.com

Enclosures

cc (via email):

Mr. Jim Kohler, P.E. (Kohler.James@epamail.epa.gov)

WRITTEN COMMENTS FOR DRAFT REPORT, DAM SAFETY ASSESSMENT OF CCW IMPOUNDMENTS, J.R. WHITING FACILITY

1. Page 1, Section 1.2 Project Scope of Work

The fourth bullet states, "Determine the hazard potential classification for units not currently classified by the management unit owner or by state or federal agencies."

The purpose and scope of work defined for the EPA Dam Safety Assessment of CCW management units was to determine the hazard potential classification for units **not** currently classified by the owner or agency. In the case of JR Whiting Ponds 1 & 2, these units were classified by Consumers in the Potential Failure Modes Analysis (PFMA) report dated December 7, 2009 as a low hazard. JR Whiting Pond 6 also has been rated as a low hazard not only in the Potential Failure Modes Analysis report (AECOM, 2009) but it is also a matter of record in the National Inventory of Dams rated by state agency.

Consumers respectfully requests that EPA contractor O'Brien & Gere revisit their evaluation and assigned hazard rating of significant to reflect hazard rating determined from Owner's third-party consultant.

2. Page 3, Section 2.1 Management Unit Identification, Ponds 1, & 2

The section for Ponds 1 & 2 indicates that the facility intake is connected to Maumee Bay. While this is a true statement, the flow of water at this point only flows into the facility, it does not flow out. Please revise statement to reflect clarification.

3. Page 3, Section 2.1 Management Unit Identification, Ponds 3, 4, & 5

The section for Ponds 3, 4, & 5 state, "In 2008, the wet sluicing of CCW ceased and final filling of the area with dry CCW (namely fly ash) began. The filling of dry CCW within this area has records indicating that the first certified final closure in this area was submitted for 2004. Please revise to reflect clarification.

4. Page 3, Section 2.1 Management Unit Identification, General

The section identifies that Pond 6 has been listed in the National Inventory of Dams as Unit MI00778. It is important to note that the construction and initial operation were conducted under the purview of the Michigan Dam Safety Act. Moreover, state officials following the standard hazard potential classification rated this facility as having a low hazard potential.

5. Page 4, Section 2.2 Hazard Potential Classification, Ponds 1 & 2

Comment No. 2 indicates that the embankments were raised with CCW material. Consumers notes that these structures were raised with bottom ash, a material that is commonly utilized as a substitute construction material for earthen structures and is typically considered "inert". The bottom ash generated at the JR Whiting facility has a site-specific inert determination from the Michigan Department of Environmental Quality authorizing its' use as final cover material or for use in the construction of perimeter/access roads. Please revise to reflect clarification.

6. Page 4, Section 2.2 Hazard Potential Classification, Ponds 1 & 2

Comment No. 2 indicates that the inspection team believes that the quantity of material that could be released into Lake Erie in the event of a breach could result in significant environmental damage. Consumers agrees that a breach event could result in the release of material; however, the extent of the release and the significance of that release relative to environmental damage has not been established.

Consumers believes that the potential for environmental damages is low based on the following:

Utilizing the US Army Corps of Engineers Impoundment Size Classification, and using the aggregated sizes of both Ponds 1 & 2, (e.g. storage = 285 acre-ft, height = 19-ft) would place this impoundment in the low range of the small impoundment category. Consumers realizes that practically any breach event at any facility could result in a release of material that will impact the environment. However, the grading of the severity of the event should have some quantification to justify such a rating. Consumers believes this is especially true with respect to Ponds 1 & 2 since they have also been rated by a third-party dam safety expert (AECOM, 2009).

Consumers respectfully requests that EPA contractor O'Brien & Gere revisit their evaluation and assigned hazard rating of significant to reflect hazard rating determined from a third-party consultant.

7. Page 4, Section 2.2 Hazard Potential Classification, Pond 6

Comment No. 2(c) indicates that the inspection team believes that the quantity of material that could be released into Lake Erie in the event of a breach could result in significant environmental damage. Consumers agrees that a breach event could result in the release of material; however, the extent of the release and the significance of that release relative to environmental damage has not been established.

Consumers believes that the potential for environmental damages is low based on the following:

Utilizing the US Army Corps of Engineers Impoundment Size Classification, and using the surface area of Pond 6, (e.g. storage = 864 acre-ft, height = 27-ft) places this impoundment in the small impoundment category. Consumers realizes that practically any breach event at any facility could result in a release of material that will impact the environment. However, the grading of the severity of the event should

have some quantification to justify such a rating. Consumers believes this is especially true with respect to Pond 6 since they have also been rated by a third-party dam safety expert (AECOM, 2009) and state dam safety officials.

Consumers respectfully requests that EPA contractor O'Brien & Gere revisit their evaluation and assigned hazard rating of significant to reflect hazard rating determined from a third-party consultant.

8. Page 6, Section 2.3.3, Outlet Works

The last sentence provides sequencing for NPDES discharge outlets. For clarification, Ponds 1 & 2 are identified as NPDES Outfall 001B and Pond 6 discharges into the #2 or #3 screen pits, not to the forebay (NPDES Outfall 001D). Please revise to reflect clarification.

9. Page 8, Section 3.1 Engineering Documents and Other Historical Information, Ponds 1 & 2

The second bullet states, in part, "As the original impoundment(s) filled with CCW, the deposited CCW material was reclaimed and used to gradually raise embankments to their existing height 590' (an additional 10')." Consumers agrees that impoundments were filled with CCW but notes that bottom ash was utilized in the embankment raising. Please revise to reflect clarification.

10. Page 9, Section 3.1 Engineering Documents and Other Historical Information, Ponds 3, 4, & 5

The third bullet indicates that Pond 5 was constructed with an ash core and outer clay shell. Please revise to reflect that the core was comprised of bottom ash.

11. Page 10, Section 3.1, Pond 6

Bullet No. 5 under this section (bullet at top of page) indicates that the perimeter buttress was designed and constructed around 1996. While the design and some construction did begin in 1996, the buttressing construction activity was not completed until sometime in 2002. Please revise to reflect clarification

12. Page 10, Section 3.1, Pond 6

Bullet No. 5 under this section (bullet at top of page) indicates from previous stability calculations that the perimeter buttress was constructed from CCW materials. As a point of clarification, the buttressing

material was constructed from bottom ash which has been determined as site-specific inert material suitable for use in earthen construction projects. These materials have a very high internal friction angle and perform equivalently to crushed rock or gravel. Please revise to reflect that construction material was bottom ash.

13. Page 10, Section 3.2, Ponds 1 & 2, and Pond 6

This section provides description of stormwater flows based on the impounding structures. The perimeter embankments also serve as roadways where the road surface is sloped inward to prevent stormwater runoff from the facility. Please revise to reflect clarification.

14. Page 10, Section 3.2 Stormwater Inflows, Pond 1 & 2, and Pond 6

The first sentence of the second paragraph should be re-written to clarify that there is more than one manual valve controlling the 3" gravity pipe. Please revise to reflect clarification.

15. Page 11, Section 3.3 Stability Analysis, Pond 6

The description states, in part, "However this analysis does not appear to evaluate typical dam safety loading conditions and apparently ignores the absence of a buttress on the south dike." This statement isn't entirely correct in terms of the extent of buttressing. There is buttressing present along a portion of the south side of the embankment. There is a corner section where the entry road and silo are situated that does not include buttressing fill. Please revise to reflect clarification.

16. Page 11, Section 3.3 Stability Analysis, Pond 6

The last sentence states, "The PFMA report acknowledges some **legitimate confusion** regarding the loading conditions and embankment configurations used by Consumers and Black & Veatch." Please restate for clarity that the PFMA acknowledges that the stability analysis was revisited in 2003 from 1996 and provided three (3) cases that appear to combine loading conditions at some sections of the perimeter dike embankment. For instance, south and east dike were labeled as east dike.

17. Page 11, Section 3.4 Instrumentation, Ponds 1 & 2

Please revise the section to read that the pond water elevations are recorded weekly.

18. Page 11, Section 3.4 Instrumentation, Pond 6

Please revise the section to read that the pond water elevations are recorded weekly.

19. Page 12, Section 3.5 Previous Inspections

This section starts by stating, "Consumers does not have a formalized dam safety related inspection schedule for the J.R. Whiting Ponds." Consumers notes that a formalized inspection schedule does exist for the J.R. Whiting Ponds but that the schedule does not include all of the elements the inspection team would have expected for a dam safety inspection. Please revise to indicate the existence of a formalized inspection program but qualify that it lacks elements expected for a dam safety inspection.

20. Page 12, Section 3.5 Previous Inspections

The first bullet reads, "Re-assessment of stability safety factors using existing embankment geometry and operating conditions for Ponds 1 & 2 and Pond 6." Consumers notes that the emphasis of the program for Pond 6 was for the unbuttressed northeast corner and south end of the pond. Please revise to indicate the emphasis on those sections.

21. Page 12, Section 3.5 Previous Inspections

Consumers notes that agency inspections include a monthly visit from the Monroe County Health Department in addition to the MDNRE (now MDEQ) quarterly inspections. Please revise to indicate clarification.

22. Page 13, Section 3.5 Operator Interviews

Consumers notes that this section appears to be errantly referred to as Section 3.5 and should be revised to reflect that it is Section 3.6. Additionally, please update participant Harold "J.R." Register to reflect PE licensure as well. Please revise to indicate clarification.

23. Page 15, Section 4.2 Summary of Findings, Pond 6

Bullet No. 4 states, in part, "The pumphouse is reported to have the capability of pumping water out of this drainage collection area and into LaPointe Drain or into Pond 6." Please revise this statement to better clarify the function of the pumphouse and 3" drain line as follows:

"The pump house can pump the drainage collection area either to Pond 6 or LaPointe Drain and it can also pump water from LaPointe Drain into Pond 6. However, the pump house cannot pump water from Pond 6 to LaPointe Drain (or anywhere else). The only way to discharge water out of Pond 6 is through the 3" line into Units 2 or 3 Screen Pits (internal outfall 001D)."

24. Page 16, Section 5 Conclusions, Ponds 1 & 2

Please revise statement "records indicate the Pond 1 & 2 embankments were raised with CCW materials" to reflect that the embankments were raised with bottom ash.

25. Page 16, Section 5 Conclusions, General

This section states, in part, "No formal, documented inspection system is currently in place to track conditions or manage deficiencies." Consumers notes that written procedures LM-100 series, at a minimum, exist that provide for routine inspection and reporting of deficiencies. Please revise to reflect that such formalized procedures exist.

26. Page 18, Section 6.3 Monitoring and Future Inspection, Pond 6

The characterization of "long history of failures" for Pond 6 does not provide the reader with a frame of reference. Please rephrase to state, "However, given the chronology of investigations and observations listed in Table 3.1 …"

27. Appendix A, Visual Inspection Checklists, Ponds 1 & 2, Checklist Number 6

The checklist item states, "A sight gage is located at the inlet to Pond 2. This level was not reported as recorded during the per shift inspection rounds." However, the pond level of the #1 ash pond is observed and recorded on a **weekly** basis. Please revise to indicate clarification.

28. Appendix A, Visual Inspection Checklists, Ponds 1 & 2, Checklist Number 17, 18, 19, 21

The word "Inspection" is misspelled. Please to correct.

29. Appendix A, Visual Inspection Checklists, Ponds 6, Checklist Number 6

The checklist item states, "A sight gage is located at the platform to the recycle intake pump platform located at the southwest corner of the impoundment. This level was not reported as recorded during the per shift inspection rounds." However, the pond level of the at this point is observed and recorded on a **weekly** basis. Please revise to indicate clarification.